

Claims

1. A four-wheel drive work vehicle comprising:
 - an engine;
 - 5 a pair of right and left steerable wheels rotatably driven by receiving power from the engine via a differential mechanism;
 - a pair of right and left non-steerable wheels rotatably driven by receiving power from the engine via right and left side clutches;
 - a displacement converter mechanism for converting a steered
 - 10 displacement of the steerable wheels into a different mode of displacement; and
 - a clutch operating member for operating one of the side clutches based on said different mode displacement converted by the displacement converter mechanism;
 - 15 wherein said displacement converter mechanism comprises a pivotal cam mechanism including a cam member which is displaced based on said steered displacement and a cam follower member operably associated with said cam member; and
 - for a vehicle turn, said clutch operating member is displaced via
 - 20 said pivotal cam mechanism by a predetermined amount in response to a steering operation of the steerable wheels by an angle exceeding a predetermined angle from a straight traveling condition and in association with said displacement of the clutch operating member by said predetermined amount, said one side clutch for one of the non-steerable
 - 25 wheels located on the inner side of said vehicle turn is automatically disengaged against an engaging urging force.
2. The four-wheel drive work vehicle according to claim 1, wherein said cam member of the pivotal cam mechanism comprises a sector
- 30 gear pivotable back and forth in response to a steering operation of a

steering wheel, said cam follower member of the pivotal cam mechanism comprises a pivot arm which comes into contact with a contact member provided to said sector gear, and said pivot arm includes a first arm portion operable by said contact member in response to a steering operation to the left and a second arm portion operable by said contact member in response to a steering operation to the right.

3. The four-wheel drive work vehicle according to claim 2, wherein the first arm portion and the second arm portion are formed integral.

4. The four-wheel drive work vehicle according to claim 2, wherein the first arm portion and the second arm portion are configured to be displaced independently of each other.

5. The four-wheel drive work vehicle according to claim 1, wherein said cam follower member of the pivotal cam mechanism comprises a pivotal cam plate having a cam face in its outer periphery, said cam member of the pivotal cam mechanism comprises a pivot member which comes into contact with said cam face, and

said pivotal cam mechanism is incorporated in a transmission case accommodating said side clutches.

6. The four-wheel drive work vehicle according to claim 5, wherein the pivotal cam plate of the pivotal cam mechanism is attached to a portion of an operational shaft attached to and extending through said transmission case, said shaft portion projecting from the case, and said clutch operating member is attached to a further portion of the shaft disposed inside the transmission case.

7. The four-wheel drive work vehicle according to claim 5,
wherein said pivotal cam plate includes a stable cam face portion formed in
the cam face for maintaining the side clutch at a predetermined clutch
disengaging condition in response to a further steering operation of the
5 steerable wheels after the clutch disengagement.

8. The four-wheel drive work vehicle according to claim 6,
wherein the operational shaft is attached to the transmission case such that
the shaft extends through the case in the fore and aft direction.

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9. The four-wheel drive work vehicle according to claim 1,
wherein the steered displacement of the steerable wheels is transmitted via
a wire to said pivotal cam mechanism.

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10. The four-wheel drive work vehicle according to claim 1,
wherein a mower implement is mounted between the steerable wheels and
the non-steerable wheels to be lifted up and down.